

OBSERVATIONS ON THE ADULT BEHAVIOR OF  
XYLOTRECHUS NAUTICUS (MANNERHEIM)

(Coleoptera: Cerambycidae)

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The members of the cerambycid tribe Clytini include some of the most colorful and interesting species in the family. Although the clytines are well represented in the New World, many of them are rare and poorly known. The biologies of some of the economically important species (*Megacyllene robiniae* (Forster), *M. caryae* (Gahan), *Glycobius speciosus* (Say), *Neoclytus acuminatus* (Fabricius), etc.) have long been known but information on adult activities such as mating behavior and oviposition is lacking for most of the group.

Observations on the adult behavior of *Xylotrechus nauticus* (Mannerheim) were made in the laboratory during the latter part of July and the beginning of August, 1962. A heavily infested log of *Quercus agrifolia* from which numerous adult cerambycids were emerging was kindly made available by E. G. Linsley. These beetles and the log were placed in a screen cage. Subsequent emergences of adults followed. On the following day a freshly cut oak log was also introduced into the cage. The behavior of the 20-30 individuals was then observed.

Activity within the cage was negligible during the morning hours but increased rapidly as the temperature rose and the outside overcast lifted. By the time the afternoon sun struck the cage directly, a peak of action was evident. It was at this time that all of the beetles were engaged in mating, seeking mates or oviposition. Almost all of the activity was taking place on the fresh log.

Mating was observed to occur repeatedly by the same individuals. The male, in coming into contact with a female, immediately mounts and attempts to join with her. His front legs grasp the female around the base of the elytra while the middle and hind pair remain in contact with the substrate. Almost immediately the male initiates a "licking" behavior on the female scutellum and the area behind it with his palpi. This apparently serves to quiet her and causes extension of the ovipositor for joining with the male. Similar behavior has been studied in lepturines by Michelsen (*in litt.*) in Denmark. The action was repeated whenever the female was disturbed or began walking. In the event of movement by the

female, the male was able to retain his position with no difficulty. The firm grip with the front legs and free middle and hind pair allowed him to stay with her. When the situation appears satisfactory to the female, she extrudes her ovipositor straight out and the male by arching his abdomen joins with it. During mating, the antennae of both are placed straight out at a slight angle and curving slightly forward. The "licking" action by the male is frequently repeated.

The males appear to be quite aggressive and frequently attempt to dislodge another mating male and take his place. The larger of the two males either takes over or retains his position. In one instance when a female left him, the male immediately attacked a nearby couple, successfully dislodged the male and joined with that female.

After mating, the female walks rapidly over the log to seek suitable oviposition niches. Her antennae are placed before her touching the surface and the ovipositor is extruded. Both organs search and probe into cracks and crevices until a suitable one is found. The ovipositor is inserted and the eggs are laid. In most cases observed, a single egg was laid but more are probably deposited on occasion. Oviposition occurs even when a male is in mating position on the female. He waits until the ovipositor is withdrawn from the niche and then couples or attempts to couple.

Most of the caged adults survived for over a week. There was no food present and the only moisture available was that exuding from the fresh log. Although suitable and acceptable wood was present, a large number of eggs were deposited on the blotter covering the cage. A possible explanation for this unusual behavior may be the permeation of the blotter by volatile substances from the fresh log which deceived the ovipositing female.

These observations were made during the course of a NSF sponsored study on North American Cerambycidae (Grant G-19959).